

REMARKS/ARGUMENTS

Claims 2-37 were pending of which Claims 2, 3, 6-8 and 26 were rejected and Claims 11-18, 21, 24 and 25 were objected to. Claims 4, 5, 9, 10, 19, 20, 22, 23 and 27-34 were allowed.

Claims 1 and 26 have been amended. Claim 38 has been added.

The Office Action objected to Claims 11-18, 21, 24 and 25 but did not indicate the grounds of the objection. Applicants presume that these claims were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims.

The Office Action indicated that Claims 2-34 were pending whereas Claims 2-37 were pending. Since Claims 35-37 depend from Claim 10, which was allowed, the Applicants presume that Claims 35-37 are also allowed.

The Applicants would appreciate clarification of the above areas of uncertainty.

Claim Rejections – 35 U.S.C. §102

Claims 2, 3, 6 and 8 were rejected under 35 U.S.C. §102(b) as being anticipated by Murakami et al., with particular reference to the embodiment shown in Fig. 4 of Murakami et al. Fig. 4 of Murakami et al. shows a semiconductor chip 2 mounted on a substrate 1, with a "plurality of fine studs filled in the substrate 1 in a certain arrangement, by which the semiconductor chip 2 are [sic] surrounded" (col. 4, lines 21-23). This is very different from the arrangement shown in Fig. 3A of this application, for example, wherein the metal studs 114 are not "filled in" a substrate, and the bottom surface of the plastic capsule 113 is exposed between the metal studs 114.

To clearly distinguish over Murakami et al., Claim 2 has been amended to recite "said metal studs protruding from a bottom surface of said molded plastic capsule such that said bottom surface of said molded plastic capsule is exposed between said metal studs." The recitation of a "molded plastic capsule" in Claim 2 is supported at page 6, lines 22-25, for example. Nowhere does Murakami et al. teach or suggest this structure.

Indeed, the title of Murakami et al. is "Semiconductor Device, Interposer For Semiconductor Device," wherein the "interposer" is defined as the "substrate 1 in which the studs 12 having the bonding pad 13 and the land 14 are filled" (col. 4, lines 36-38).

Hence, Claim 2 is allowable over Murakami et al. Claims 3, 6 and 8 depend from Claim 2 and are therefore allowable for the same reason. Claims 11-18, 21, 24 and 25, which were objected to, likewise depend from Claim 2 and are also allowable for at least that reason.

Claim Rejections – 35 U.S.C. §103

Claim 7 was rejected under 35 U.S.C. §103(a) as being unpatentable over Murakami et al. on the ground that it would have been obvious “to have used one row of studs.” Claim 7 depends from Claim 2 and is therefore also allowable over Murakami et al. for the reason stated above.

Claim 26 was rejected under 35 U.S.C. §103(a) as being unpatentable over Murakami et al. in view of Zalesinski et al. The Examiner cited Zalesinski et al. as teaching “studs being attached to the chip.” Claim 26 has been amended to change its dependency to Claim 11 and to recite that “said die-attach pad protrudes from said bottom surface of said molded plastic capsule, a plated metal layer being formed on a bottom surface of said die-attach pad.”

Claim 11 in turn depends from Claim 2. Claim 26 is allowable over Murakami et al. in view of Zalesinski et al. since neither of these references teaches, alone or in combination, the limitations of Claims 2 and 11, along with a die-attach pad that “protrudes from said bottom surface of said molded plastic capsule” and “a plated metal layer ... formed on a bottom surface of said die-attach pad.”

Allowed Claims

Claims 4, 5, 9, 10, 19, 20, 22, 23 and 27-34 were allowed. Claims 35-37 are allowable by reason of their dependency on Claim 10.

New Claim

New Claim 38 have been added. Claim 38 recites “said layer of a second metal is a Ni layer, said package further comprising a Pd layer on said Ni layer and an Au layer on said Pd layer.” This limitation is supported at page 8, lines 9-10, of this application. Since Claim 38 depends from Claim 2, Claim 38 is allowable for the reason stated above.

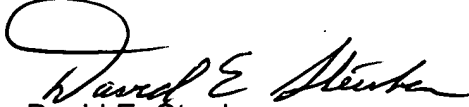
For the above reasons, Applicants respectfully request allowance of Claims 2-38.
Should the Examiner have any questions concerning this response, the Examiner is invited to call the undersigned at (408) 982-8201.

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